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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,506	10/12/2001	Christopher W. Gabrys	IG2209US	2619

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J Michael Neary
Neary Law Office
542 SW 298th Street
Federal Way, WA 98023

EXAMINER

PHAM, LEDA T

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/976,506

Applicant(s)

GABRYS ET AL.

Examiner

Leda T. Pham

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1 - 16 in Paper filed on 3/26/03 is acknowledged.
2. Claims 19 - 20 have been entered.
3. Since Applicant did not provide any traversal arguments to the restriction requirement, the response is considered as election without traverse; therefore, the election/restriction is made FINAL.

Claim Objections

4. Claim 1 is objected to because of the following informalities: "degredation" on line 10 of claim 1 is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 19 - 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bitterly et al. (U.S. Patent No. 5,614,777) in view of Sharmo (U.S. Patent No. 4,933,581).

Referring to claim 1, Bitterly teaches a motor/generator for a flywheel energy storage system (figure 3) having a housing (206) adapted to be evacuated and maintained at a low pressure atmosphere, a flywheel (30, figure 1) supported for low-loss rotation in said low pressure atmosphere within said housing on a bearing system (260, 282), a nonvaporable getter

(262) for maintaining said low pressure atmosphere in said housing, and a motor/generator (20a, figure 2) for accelerating and decelerating said flywheel for storing and retrieving energy, said motor/generator comprising a rotor (130) that is coupled to and rotates with said flywheel, a stationary stator (290) that cooperates with said rotor for converting between electrics and mechanical energy in said flywheel system. However, Bitterly does not teach said stator has a thin barrier coating for minimizing depredation of said low pressure atmosphere by minimizing outgassing from said stator into said housing.

Sharmo teaches in his invention (figure 2) a stator (12) having electromagnetic coils, with a thin barrier coating (13) for reflect heat from the winding so that it does not radiate to the motor.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the stator with a thin barrier coating as taught by Sharmo. Doing so would reflect heat from the winding so that it does not radiate to the motor.

Referring to claim 19, the combination of Bitterly and Sharmo ref. teaches a flywheel system made of components assembled inside an evacuated chamber, said flywheel system having a barrier coating to reduce outgassing from said components of said flywheel system comprising a deposit of a vaporized metal vapor as barrier coating (thin metal coating, aluminum powder) of said metal inside said chamber on said flywheel system components (rotor, stator, winding, figure 3).

Referring to claim 20, Sharmo teaches the barrier coating has a thickness between 1000 Angstroms and 10 mils.

7. Claim 2 – 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Bitterly and Sharmo as applied to claim 1 above, and further in view of Woodard et al. (U.S. Patent No. 6,347,925 B1).

Referring to claim 2, the combination of Bitterly and Sharmo ref. teaches the claim invention except for the added limitation of the flywheel is constructed principally of steel.

Woodard teaches a flywheel system with a flywheel is made of steel (lines 37 – 39, column 10) to having strength and stability under load.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use steel to be material for the flywheel as taught by Woodard. Doing so would make the flywheel having strength and stability under load. Also, it has been held to be within the general skill of a worker in the art to select a known material in the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin 125 USPQ 416.*

Referring to claim 3, Sharmo teaches the motor/generator for a flywheel energy storage system wherein said barrier coating is a metal (line 7, column 2).

Referring to claim 4, Sharmo teaches the motor/generator for a flywheel energy storage system wherein said electromagnetic coils are substantially enclosed in said barrier coating (37, line 51 –55, column 5).

Referring to claim 5, Sharmo teaches the motor/generator for a flywheel energy storage system wherein said motor/generator stator has a laminated core (line 44 –46, column 3), and said barrier coating covers vacuum exposed surfaces of all laminations in said motor/generator core.

Referring to claim 6, Bitterly teaches the motor/generator for a flywheel energy storage system wherein said motor/generator has a separate motor and a separate generator (figure 1).

Referring to claim 7, Sharmo teaches the motor/generator for a flywheel energy storage system wherein said metal barrier coating is constructed of metal foil (line 60 –65, column 5).

8. Claim 8 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Bitterly, Sharmo, and Woodard as applied to claim 7 above, and further in view of Johnston et al. (U.S. Patent No. 6,232,681 B1).

Referring to claim 8 and claim 9, the combination ref. teaches the claims invention except for the added limitation of the foil is bonded to the stator after or during manufacture.

Johnston teaches coating foil bonding to the stator after or during manufacture in lines 50 – 58, column 5 to produce a suitable result in making the stator.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to making the stator as taught by Johnston. Doing so would produce a suitable result.

9. Claim 10, 12 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Bitterly, Sharmo and Woodard as applied to claim 2 above, and further in view of Eisenhaure et al. (U.S. Patent No. 5,96,446).

Referring to claim 10, the combination ref. teaches the claim invention except for the added limitation of the stator is enclosed in a nonmetallic container that holds a cooling liquid.

Eisenhaure teaches a flywheel permanent magnet machine having a stator enclosing in a nonmetallic container (62) that holds a cooling liquid (lines 4 – 10, column 4) for cooling the stator.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to making the stator with a nonmetallic container as taught by Eisenhaure. Doing so would cool the stator.

Referring to claim 12, Sharmo teaches the barrier coating is a metal (line 7, column 2).

Referring to claim 13, Eisenhaure teaches the barrier coating is a ceramic (line 7, column 4)

10. Claim 11, 14 – 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Bitterly and Sharmo as applied to claim 1 above, and further in view of Asao et al. (U.S. Patent No. 6,429,552 B2).

Referring to claim 11, the combination ref. teaches the claim invention, except for the added limitation of the barrier coating is applied by physical vapor deposition.

Asao teaches an A.C. generator for vehicle with the barrier coating of the stator is applied by physical vapor deposition (lines 61 – 65, column 5) for improving insulation at a coil end of a stator coil.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the way to apply the barrier coating of the stator as taught by Asao. Doing so would improve insulation at the coil end of the stator.

Referring to claim 14, Asao teaches the barrier coating is applied by a process selected from the group consisting of dipping, wiping, spraying and brushing (lines 30 – 34, column 3).

Referring to claim 15, Asao teaches the barrier coating is in the form of a colloidal suspension particle prior to application (carbon).

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Referring to claim 16, Asao teaches the particles in said colloidal suspension of particles are carbon particles.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (703) 305-4864. The examiner can normally be reached on M-F (7:30-5:00) first Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

Leda T. Pham
Examiner
Art Unit 2834

LTP
June 27, 2003



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